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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/479,886	01/10/2000	TAKASHI KAKIUCHI	G5030.0013/P	3652
24998	7590	08/22/2005	EXAMINER	
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP			LAROSE, COLIN M	
2101 L Street, NW			ART UNIT	
Washington, DC 20037			PAPER NUMBER	
			2623	

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/479,886

Applicant(s)

KAKIUCHI ET AL.

Examiner

Colin M. LaRose

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Arguments and Amendments

1. Applicant's amendments and arguments filed 18 May 2005, have been entered and made of record.

Response to Amendment and Arguments

2. Applicant's arguments regarding the newly amended claims have been fully considered, but they are not deemed to be persuasive for at least the following reasons.

Applicant has amended the claims to denote that the target pattern to be detected is "non-circular." Essentially, Applicant maintains that Fu's disclosure is dedicated only to detecting circular patterns, such as shown in figure 3, and is not capable of detecting non-circular patterns.

Examiner respectfully disagrees with Applicant's position that Fu teaches detecting only circular patterns. Fu characterizes the image in figure 3 as the "basic pattern type" to be recognized. The basic pattern type comprises a circle with a specific image pattern contained therein. Fu's disclosure suggests that the specific image is what is to be recognized, and that the outer circle facilitates the process of locating the specific pattern.

Applicant seems to assert that since Fu's specific image pattern is enclosed within a circle, it is necessarily "circular." Examiner believes that this is a reasonable characterization of Fu's specific pattern, however, the Examiner also believes that an equally reasonable case can be made for Fu's specific patterns not being necessarily circular. It is true that Fu's specific pattern is enclosed within a circle, but one can say that the specific pattern itself is not circular. For

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example, the specific pattern illustrated in figure 3 contains wavy lines, sloping segments, and straight edges, which are not characteristics of a circular pattern.

Whereas Applicant sees the specific pattern as "circular" in view of the *perimeter* of the specific pattern area being circular, Examiner sees the specific pattern as "non-circular," in view of the *contents* of the specific pattern area being non-circular. Both interpretations are believed to be valid. Therefore, Applicant is encouraged to more particularly point out and claim how the target pattern to be detected in the present invention differs from Fu's target pattern. Also, since it appears that Applicant's disclosed method of detecting target patterns differs from the method of Fu, Applicant is also encouraged to particularly point out and claim how the method of detecting a target pattern of the present invention differs from that of Fu.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-16 and 20-24 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,370,271 to Fu et al. (hereinafter "Fu").

As to claim 1, Fu discloses an image recognition device, for detecting a non-circular target pattern (note "a bitmap image provided by any digital image acquisition device" at column

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6, lines 16-19, as well as "currency, securities, negotiable instruments, etc." at column 11, lines 33-34), comprising:

an element matching means to match a plurality of input pattern elements obtained by dividing an input image into a plurality of regions with the corresponding target pattern elements of the non-circular target pattern (column 2, line 65 to column 3, line 1; column 3, lines 7-11; Figures 1A-1E; Fig.6, elements 603, 604, 605); and

a non-circular pattern detection means to detect relative positions of said plurality of input pattern elements compared with a multiple magnification reference arrangement data (column 7, lines 47-56; column 9, lines 1-3) of each of said target pattern elements in order to recognize whether said input image includes said target pattern (column 3, lines 4-5; Figs.1A-1E; Fig.6, elements 608, 609);

wherein said multiple magnification reference arrangement data corresponds to magnification levels no greater than a level where a human eye can distinguish between an original and a magnification (at column 7, line 47-56, at least the magnification scale of 100% (i.e., a magnification level of 0) would not be distinguishable to the human eye. In other words, the human eye would not be able to distinguish between an original and a magnification scale of 100%. Any reference arrangement data at 100% magnification would therefore meet the language of the claim.).

As to claim 2, Fu discloses an image recognition device, for detecting a non-circular target pattern, comprising:

a dictionary generating unit which stores dictionary data for each pattern element in a non-circular target pattern (column 4, line 63);

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an element matching unit, which compares and matches input image pattern data which is provided as input against said dictionary data stored in said dictionary generating unit (column 2, line 65 to column 3, line 1; column 3, lines 7-11; Figures 1A-1E; Fig.6, elements 603, 604, 605);

an arrangement data generating unit which stores the position data representing the arrangement of each of the target pattern elements at a plurality of magnifications, each of said plurality of magnifications being no greater than a level where a human eye can distinguish between an original and magnification (column 3, lines 4-5; column 7, lines 46-58; column 9, lines 1-3; at column 7, line 47-56, at least the magnification scale of 100% (i.e., a magnification level of 0) would not be distinguishable to the human eye. In other words, the human eye would not be able to distinguish between an original and a magnification scale of 100%. Any reference arrangement data at 100% magnification would therefore meet the language of the claim.); and

a pattern detection unit, which based on the output of said element matching unit and said position data from said arrangement data generating unit, determines whether said target pattern can be found in said input image pattern data (column 3, lines 4-5; Figures 1A-1E; Fig.6, elements 608, 609);

Regarding claims 3-6, Fu further discloses that the dictionary generating unit, the element matching unit, the arrangement data generating unit, and the pattern detection unit comprising software routines (column 5, lines 22-24).

As to claim 7, Fu discloses an image processing device, for detecting a non-circular target pattern (note "a bitmap image provided by any digital image acquisition device" at column 6, lines 16-19, as well as "currency, securities, negotiable instruments, etc." at column 11, lines 33-

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34) at multiple magnification levels each below a threshold where said magnification can be readily identified as a magnified version of an original by a human eye (at column 7, line 47-56, at least the magnification scale of 100% (i.e., a magnification level of 0, which is below any threshold) would not be distinguishable to the human eye. In other words, the human eye would not be able to distinguish between an original and a magnification scale of 100%. Any reference arrangement data at 100% magnification scale would therefore meet the language of the claim.)comprising:

an element matching means to match a plurality of input pattern elements obtained by dividing an input image into a plurality of regions with the corresponding target pattern elements of the non-circular target pattern (column 2, line 65 to column 3, line 1; column 3, lines 7-11; Figures 1A-1E; Fig.6, elements 603, 604, 605);

a pattern detection means to detect relative positions of said plurality of input pattern elements compared with a reference arrangement data at multiple magnifications of each of said target pattern elements in order to recognize whether said input image includes said target pattern (column 3, lines 4-5; column 7, lines 46-58; column 9, lines 1-3; Figures 1A-1E; Fig.6, elements 608, 609) ; and

a control means to control output of said input image to an output device when said pattern detection means recognizes said input image includes said target pattern (Figs 1A-1E; note the printer).

With regard to claim 8, Fu further discloses that the output device comprises a printer (Figs. 1A-1E).

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Fu further discloses the scanner, digital camera or floppy disk for inputting the input image, as required by claims 9-11 (Figs. 1A-1E; column 5, lines 4-5 and 11-12).

With regard to claim 12, Fu further discloses a personal computer to facilitate copying of said input image (Fig. 1C).

Claim 13 is drawn to a recording medium containing computer code for implementing an image recognition method for non-circular target patterns which corresponds to the device of claim 1. Fu discloses this at column 5, line 4-10.

As to claim 14, Fu discloses a method of processing an image, to detect a non-circular target pattern, said method comprising:

inputting the non-circular reference image (column 3, lines 4-12; note "a bitmap image provided by any digital image acquisition device" at column 6, lines 16-19, as well as "currency, securities, negotiable instruments, etc." at column 11, lines 33-34);

determining target pattern elements for said reference image by dividing said reference image into a plurality of regions (column 3, lines 37-41);

determining reference arrangement data for each of said target pattern elements at a plurality of magnifications, said plurality of magnifications being no greater than a level where a human eye can distinguish between an original and an magnification (column 3, lines 4-15; column 7, lines 46-58; column 9, lines 1-3; at column 7, line 47-56, at least the magnification scale of 100% (i.e., a magnification level of 0) would not be distinguishable to the human eye. In other words, the human eye would not be able to distinguish between an original and a magnification scale of 100%. Any reference arrangement data at 100% magnification would therefore meet the language of the claim.);

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inputting data for an input image (Fig.6, input to element 601);
determining input elements for said input image by dividing said input image
into said plurality of regions corresponding to said reference image (column 3, lines 9-10); and
comparing said target pattern elements and said input elements (column 3, lines 12-15).

As to claim 15, Fu discloses the method of claim 14, wherein said comparing comprises
comparing said target pattern elements and said input elements relative position to each other
using said arrangement data (the templates, column 3, lines 40-41).

As to claim 16, Fu discloses the method of claim 14 further comprising halting if said
target pattern elements include said input elements based on said comparing (column 6, lines 48-
51).

Regarding claims 20-24, Fu discloses a magnification level no greater than 15% (column
7, lines 46-58; for a magnification scale of 100%, the magnification level is 0, which is lower
than 15%).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
such that the subject matter as a whole would have been obvious at the time the invention was made to a person
having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the
manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the
claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various
claims was commonly owned at the time any inventions covered therein were made absent any

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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fu.

As to claim 18, Fu does not disclose reducing the resolution of a reproduction of said input image if said target pattern elements include said input elements based on said comparing. The Examiner takes Official Notice that reducing the resolution of a reproduction is well known in the art. It would have been obvious to one of ordinary skill in the art to implement this technique in Fu because it would allow a person to easily distinguish a reproduction from an original.

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Fu and U.S. Patent 5,583,614 to Hasuo et al. (hereinafter "Hasuo"). As to claim 17, Fu does not disclose changing the color of a reproduction of said input image if said target pattern elements include said input elements based on said comparing. However, Hasuo teaches outputting an image in a different color if it is determined that an input image is money (i.e., should not be copied) based on a comparison (Fig.6). It would have been obvious to one of ordinary skill in the art to employ Hasuo's technique in Fu's method because this would allow a person to easily see that a printed document is a copy, and not an original. This would be important for documents which should not be copied exactly, such as money, for example.

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9. Claims 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Fu and U.S. Patent 5,257,119 to Funada et al. (hereinafter "Funada").

As to claim 19, Fu does not disclose superimposing an alphanumeric character on top of a reproduction of said input image if said target pattern elements include said input elements based on said comparing. However, Funada teaches superimposing alphanumeric characters on top of a reproduction of an input image when it is determined that the input image is confidential based on the presence of certain information in the image (e.g., Fig.10; column 8, line 46 to column 9, line 11). It would have been obvious to one of ordinary skill in the art to employ Funada's technique in Fu's method because this would allow a person to easily see that a printed document is a copy, and not an original. This would be important for documents which should not be copied, such as confidential documents, for example.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colin M. LaRose whose telephone number is (571) 272-7423.

Please note that this application has been reassigned to Colin LaRose. If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Jingge Wu, can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600 Customer Service Office whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CML
Group Art Unit 2623
17 August 2005



VIKRAM BALI
PRIMARY EXAMINER